REMARKS

This application has been reviewed in light of the Office Action dated November 28, 2003. Claims 1, 4, 5, 9-11, 14, 15, and 19-23 are pending in this application. Claims 1, 11, 22, and 23, which are the independent claims, have been amended to define still more clearly what Applicants regard as their invention. Favorable reconsideration is requested.

The Examiner objected to Claims 1, 11, 22, and 23, requiring that the recitation "is disposed asymmetrically in a side of the discharge port" be changed to --is disposed asymmetrically on a side of the discharge port --. Applicants have made this change accordingly and respectfully request withdrawal of this objection.

The Office Action rejected Claims 1, 4, 5, 9, 21/1 and 22 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,660,739 (Ozaki et al.), in view of U.S. Patent No. 4,458,256 (Shirato et al.); rejected Claim 10 as being unpatentable over Ozaki et al. in view of Shirato et al., and U.S. Patent No. 4,429,321 (Matsumoto); rejected Claims 11, 14, 15, 21/11 and 23 as being unpatentable over Ozaki et al. in view of Shirato et al. and European Patent No. 764,531 (Nakata et al.); rejected Claim 19 as being unpatentable over Ozaki et al. in view of Shirato et al., Nataka et al., and U.S. Patent No. 5,658,471 (Murthy et al.); and rejected Claim 20 as being unpatentable over Ozaki et al. in view of Shirato et al., Nakata et al., and Matsumoto. Applicants respectfully traverse these rejections.

Applicants submit that amended independent Claims 1, 11, 22, and 23, together with the remaining claims dependent thereon, are patentably distinct from the proposed combination of the cited prior art at least for the following reasons.

The aspect of the present invention set forth in Claim 1 is a liquid discharge head comprising a heat generating element contacted with and between a pair of electrodes for generating thermal energy which is used for discharging liquid from a discharge port, and a protective film provided on the heat generating element to protect the heat generating element. The protective film has a first region provided between the pair of electrodes, the first region having a substantially uniform thickness along a direction connecting the pair of electrodes, and has a second region provided between the pair of electrodes, the second region having a substantially uniform thickness along the direction, where the second region is thinner than the first region stepwise and is disposed asymmetrically only on a side of the discharge port between the pair of electrodes along the direction. The volume of a liquid droplet discharged from the discharge port is changed by changing electric energy applied to the heat generating element, and the protective film is composed of plural protection layers, the first region having more layers than the second region.

Among the notable features of Claim 1 is that the second region is disposed asymmetrically only on a side of the discharge port between the pair of electrodes along the direction.

Ozaki et al. relates to a method of producing a substrate for an ink jet recording head, an ink jet recording head and an ink jet recording apparatus. The Office Action states that the second region being disposed asymmetrically in a side of the discharge port between the pair of electrodes along the direction is taught by Ozaki et al., noting that "[s]ince the size of the first region is different than the size of the second region, the second region would be disposed asymmetrically on a side of the discharge port." Applicants submit that in Ozaki et al., a region corresponding to "second region" is provided at substantially a central position between the pair of electrodes. Applicants

submit, however, that Ozaki et al. does not teach or suggest that the second region is disposed asymmetrically only on a side of the discharge port between the pair of electrodes along the direction.

Applicants further submit that the Office Action does not state that anything in Shirato would disclose this feature, and Applicants submit that nothing has been found in Shirato et al. that would teach or suggest this feature.

Accordingly, at least for this reason, Applicants submit that Claim 1 is patentable over the cited prior art, when taken separately or in any proper combination.

Independent Claims 11, 22, and 23 include the same feature of the second region being disposed asymmetrically only on a side of the discharge port between the pair of electrodes along the direction, as discussed above in connection with Claim 1. Accordingly, Claims 11, 22, and 23 are believed to be patentable for at least the same reasons as discussed above in connection with Claim 1.

A review of the other art of record, including Matsumoto, Nakata et al., and Murthy et al., has failed to reveal anything that, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as applied against the independent claims herein. Therefore, those claims are respectfully submitted to be patentable over the art of record.

The other rejected claims in this application depend from one or another of the independent claims discussed above, and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and the allowance of the present application.

Applicants' undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

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